

WHAT IS CLAIMED IS:

1. An ATM switch wherein plural output circuits are accommodated in an output circuit module section which includes a shaper section and a circuit interface section, and an ATM cell(s) is transferred to a chosen output circuit via a shaper chosen from plural
- 5 shapers which compose the shaper section at the time of a connection set-up and the circuit interface section, comprising:

- a shaper/circuit control section which includes a shaper/circuit-related table wherein a shaper number indicating the shaper chosen from the plural shapers constituting the shaper section at
 - 10 the time of a connection set-up and a circuit number of the output circuit to which the ATM cell(s) is transferred from the chosen shaper are related to each other and stored, judges whether or not a shaper corresponding to an assigned circuit number is registered in the shaper/circuit-related table in response to an interrogation about the
 - 15 assigned circuit number from the outside, outputs the shaper number of the corresponding shaper in the case where it is registered in the table, and establishes a relationship of a shaper number with the inputted assigned circuit number in the case where it is not registered in the table; and

- 20 a connection control section which interrogates the shaper/circuit control section about the assigned circuit number at the time of a connection set-up, chooses a shaper corresponding to the shaper number from the shaper section in the case where the shaper number is inputted from the shaper/circuit control section in response to the
 - 25 interrogation, registers a shaper number corresponding to the assigned circuit number in the shaper/circuit-related table in the case where the shaper number is not inputted from the shaper/circuit control section, and sets up a connection between the chosen shaper and the circuit of assigned circuit number to the output circuit module section.

2. An ATM switch wherein plural output circuits are accommodated in an output circuit module section which includes a shaper section and a circuit interface section, and in which an ATM cell(s) is transferred to a chosen output circuit via a shaper chosen from plural shapers which compose the shaper section at the time of a connection set-up and the circuit interface section, comprising:

a shaper/circuit control section which includes a shaper/circuit/VP-related table wherein a shaper number indicating the shaper chosen from plural shapers constituting the shaper section at the time of a connection set-up and a circuit number of the output circuit to which an ATM cell(s) is transferred from the chosen shaper are related to each other and stored, judges whether or not a shaper corresponding to an assigned circuit number and an assigned VP number is registered in the shaper/circuit/VP-related table in response to an interrogation about the assigned circuit number and the assigned VP number from the outside, outputs the shaper number of the corresponding shaper in the case where it is registered in the table, and establishes a relationship of a shaper number with the inputted assigned circuit number and the assigned VP number in the case where it is not registered in the table;

and

a connection control section which interrogates the shaper/circuit control section about the assigned circuit number and the assigned VP number at the time of a connection set-up, chooses a shaper corresponding to the shaper number from the shaper section in the case where the shaper number is inputted from the shaper/circuit control section in response to the interrogation, registers a shaper number corresponding to the assigned circuit number and the assigned VP number in the shaper/circuit/VP-related table in the case where the shaper number is not inputted from the shaper/circuit control section,

30 and sets up a connection using an optional virtual path between the chosen shaper and the circuit of the assigned circuit number to the output circuit module section.

3. The ATM switch as claimed in claim 2, wherein plural VP numbers correspond to one circuit in the shaper/circuit/VP-related table.

4. The ATM switch as claimed in claim 2, wherein units of plural VP numbers correspond to any one of plural circuits in the shaper/circuit/VP-related table.

5. A method for controlling traffic shapers in an ATM switch wherein plural output circuits are accommodated in an output circuit module section which includes a shaper section and a circuit interface section, and in which an ATM cell(s) is transferred to a chosen output
5 circuit via one of the shapers chosen from plural shapers which compose the shaper section at the time of a connection set-up and the circuit interface section, comprising steps of:

judging whether or not a shaper number of a shaper corresponding to an assigned circuit number is registered in a
10 shaper/circuit-related table at the time of a connection set-up, as a first step;

choosing a shaper of the corresponding shaper number in the case where it is judged that the shaper number corresponding to the assigned circuit number is registered at the first step, as a second step;

15 registering the assigned circuit number and a shaper number in the shaper/circuit-related table in the case where it is judged that a shaper number corresponding to the assigned circuit number is not registered at the first step, as a third step;

establishing a relationship between the circuit and the shaper,

20 which correspond to the assigned circuit number and the shaper number registered at the third step respectively, to the shaper section and the circuit interface section, as a fourth step; and

setting up a connection using the shaper of the shaper number corresponding to the circuit of the assigned circuit number to the shaper
 25 section and the circuit interface section after the operation of the second step or the fourth step, as a fifth step.

6. A method for controlling traffic shapers in an ATM switch wherein plural output circuits are accommodated in an output circuit module section which includes a shaper section and a circuit interface section, and in which an ATM cell(s) is(are) transferred to a chosen
 5 output circuit via one of the shapers chosen from plural shapers which compose the shaper section at the time of a connection set-up and the circuit interface section, comprising steps of:

judging whether or not a shaper number(s) of a shaper(s) corresponding to an assigned circuit number and an assigned VP
 10 number(s) is(are) registered in a shaper/circuit/VP-related table at the time of a connection set-up, as a first step;

choosing a shaper(s) of the corresponding shaper number(s) in the case where it is judged that a shaper number(s) corresponding to the assigned circuit number and the assigned VP number(s) is registered
 15 according to the first step, as a second step;

registering the assigned circuit number, the assigned VP number(s), and shaper number(s) in the shaper/circuit/VP-related table in the case where it is judged that a shaper number(s) corresponding to the assigned circuit number and the assigned VP number(s) is not
 20 registered at the first step, as a third step;

establishing a relationship between the circuit and the shaper(s), which correspond to the assigned circuit number, the assigned

VP number(s), and the shaper number(s) registered at the third step respectively, to the shaper section and the circuit interface section, as a
25 fourth step; and

setting up a connection using the shaper(s) of the shaper number(s) corresponding to the circuit of the assigned circuit number to the shaper section and the circuit interface section after the operation of the second step or the fourth step, as a fifth step.